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ABSTRACT

This directory of financial aid sources for minority students majoring in engineering or scientific fields includes the following types of information: (1) summary and description of the field, including college enrollment statistics, degrees awarded, demand for graduates (including salary ranges), and definitions of major fields; (2) directory of financial aid programs that assist minority group students with scholarships, fellowships, loans or other financial aid (each directory entry provides the name and address of the organization and a brief description of the type of aid provided and any special restrictions or requirements); (3) a list of associations and other organizations in these fields offering additional assistance to students; and (4) a list of books and other resources. An index by major field is also provided. (KM)

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Financial Aid for Minorities in Engineering and Science

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SECTION I

INTRODUCTION

In 1957 the Russians launched the first space capsule, Sputnik, which caught America by surprise. This country had always been the first in major scientific achievements: airplanes, automobiles, and atomic energy to name but a few.

In 1957, federal troops were called to Arkansas to help desegregate the Little Rock High School.

The two events are not unrelated. Following the Russian space triumph, this country adopted a number of programs designed to increase the number of students preparing for careers in science and engineering. In the aftermath of the integration at Little Rock more and more high schools were open to students of all races. Colleges and universities, which often had discouraged minority candidates, began to actively recruit them--particularly for the fields of engineering and science where minorities have been particularly underrepresented.

Recruitment of Minorities

The first major efforts to recruit minorities for technical fields began in the mid-1960s. Shortly after that the Garrett Park Press brought out its first edition of the Directory of Special Programs for Minority Group Members to help publicize these new programs.

Various professional societies made an organized effort to inform minority students about opportunities in their field and many of those programs continue today and are cited in this booklet.

Employing organizations helped by providing scholarships for academic study along with summer jobs and internships to provide practical experience. Some of these programs are also cited in this booklet.

Minority professionals visited classrooms to urge high school students to take courses which might lead to technical careers. Many colleges and universities established special scholarship and fellowship programs for minorities.

In 1980, the National Action Council for Minorities in Engineering was established and has been one of the key groups helping to increase the number of minority students preparing for engineering careers. It helps by raising money for high technology companies and foundations and making the money available to help students and institutions. In a recent year, the Council provided 3 million dollars to help 4,000 minority students.

The booklet identifies sources of support for financial aid for minority students and helps to direct them to organizations and institutions trying to aid students interested in engineering and science.

Enrollment in Colleges and Universities

In 1950, engineering students received 12.2 percent of all bachelor's degrees awarded by American colleges and universities. By 1980, the percentage had dropped to 6.4 percent. There were actually more students majoring in engineering but their growth had failed to match gains in other areas and fell far short of what national leaders felt was the needed supply of new engineering talent. Since 1983, the number of students enrolled in engineering has actually declined despite the fact that enrollments in other areas have stabilized.

Since 1976-77, minorities have accounted for between five and eight percent of students enrolled in engineering programs as shown by data from the National Action Council for Minorities in Engineering.

Engineering Fall Semester Enrollments

Academic Year	Black	Hispanic	American Indian	Total Minority	Total Undergrad
1976-77	9,828	5,138	446	15,412	254,797
1978-79	12,954	7,158	625	20,737	308,556
1980-81	16,181	9,043	903	26,127	362,300
1982-83	17,589	10,683	1,078	29,359	400,038
1984-85	17,451	12,192	1,186	30,829	388,992
1985-86	17,994	12,941	1,120	32,055	379,830

The data shows that a higher percent of minority students are majoring in an engineering field today, but their share is less than half their proportion in our total population.

Comparable data on enrollments by minorities in the sciences is not readily available. Some measure of enrollments may be obtained by looking later at information on degrees awarded to minorities in science fields.

Degrees Awarded in Engineering and Science

In 1985-86, 4,107 Black, Hispanic, and Native Americans graduated with bachelor's degrees in engineering. They accounted for 5.3 percent of the graduating class--low but a percentage that has been growing slowly in recent years.

In the area of science, these data are for recent years and show total graduates and percent minority at the bachelor's level. Minority does not include foreign students.

	All Students	Minority	Minority as percent of all students
Chemistry	11,261	840	7.5%
Computer Science	22,152	3,125	14.1%
Geoscience	3,804	29	0.7%
Physics	4,878	264	5.4%

The above figures come from Professional Women and Minorities published by the Commission on Professionals in Science and Technology (1500 Massachusetts Avenue NW, Washington, DC 20005). Because federal agencies do not routinely collect data on degree awards by race the information is not as complete as might be desired.

At the graduate level, minority students are also not as represented as many feel they should be. Columnist William Raspberry recently noted that in 1985 U.S. universities awarded 4,500 doctorates in the physical science but only 49 went to Blacks.

Demand for Graduates

Our society is growing in its dependence upon technology and enrollments and graduates in engineering and science have fallen short of the demand for many years so that the outlook for persons preparing in these fields remains good.

Between 1978 and 1990, an increase of 70 percent was cited as the need for aeronautical engineers. The increases needed in other technical fields were 51 percent in electrical engineering, 39 percent in civil engineering, 37 percent in mechanical engineering, 34 percent in industrial engineering, and 29 percent in chemical engineering.

A later study showed that the highest current demand may be for graduates in these fields:

Computer engineering
Computer science
Electrical engineering

Followed by:

Systems analysis
Industrial engineering
Computer programming

The least demand, in the science and engineering areas, was for these areas:

Chemical engineering
Civil engineering
Mechanical engineering
Chemistry

But, a demand exists for all of these fields as shown by the relatively high starting salaries paid new graduates at these levels of education. The salary rates are ranges for 1987:

Bachelor's degree	-	$22,000 - $30,000
Master's degree	-	$24,000 - $32,000
Doctor's degree	-	$30,000 - $40,000

Definitions of Major Fields

These are some of the major areas within the field of engineering and science.

ARCHITECTS design buildings as well as multibuilding complexes such as urban renewal projects, college campuses, and industrial parks.

AEROSPACE ENGINEERS design, develop, test, and help produce commercial and military aircraft. They also conduct research and design projects in the area of space exploration.

CHEMICAL ENGINEERS design equipment and plants and develop methods of manufacturing chemicals and related products.

CIVIL ENGINEERS design and supervise the construction of roads, bridges, airports, tunnels, water supply and sewage systems, and buildings.

ELECTRICAL AND ELECTRONIC ENGINEERS design, develop, test, and supervise the manufacture of electrical and electronic equipment.

INDUSTRIAL ENGINEERS determine the most effective way for an organization to organize and use its resources (people, technology, equipment, energy).

MECHANICAL ENGINEERS design and develop power-producing machines such as internal combustion engines and steam and gas turbines. They work on power-using machines such as refrigeration and air-conditioning equipment.

METALURGICAL ENGINEERS help to extract metals from ores or convert refined metals and alloys into final products.

CERAMIC ENGINEERS develop new ceramic materials and methods for using ceramic materials in useful products.

MINING ENGINEERS locate, extract, and prepare minerals for manufacturing industries to use.

NUCLEAR ENGINEERS design, develop, monitor, and operate nuclear power plants used to generate energy or power ships.

PETROLEUM ENGINEERS explore and drill for oil and gas.

COMPUTER SYSTEMS ANALYSTS plan and develop methods for computerizing business and scientific tasks or improving computer systems already in use.

MATHEMATICIANS work with one of the oldest sciences to help resolve scientific and manufacturing problems with mathematical solutions.

STATISTICIANS use the relationship of numbers to devise, carry out, and interpret the numerical results of surveys and experiments.

CHEMISTS search for and put to practical use new knowledge about substances. They work with the basic components of fibers, paints, adhesives, drugs, lubricants, and other products.

GEOLOGISTS AND GEOPHYSICISTS study the physical aspects and history of the earth to aid in locating oil, natural gas, minerals, and other resources.

PHYSICISTS study the structure and behavior of the universe and use such principles as gravity, electro-magnetism, and nuclear interactions to help resolve practical problems today.

AGRICULTURAL SCIENTISTS study farm crops and animals and develop better ways to improve their quality and control.

BIOLOGICAL SCIENTISTS study all aspects of living organisms and the relationship of animals and plants to the environment.

SECTION II

SCHOLARSHIPS, FELLOWSHIPS, AND LOANS IN ENGINEERING AND SCIENCE

Listed in this section are hundreds of awards open to students in specific fields of engineering and science.

The descriptions are brief and are not designed to provide complete information on programs. Full details on the programs, and the requirements for the current year, should be obtained by writing the organizations directly. The kinds of awards available and deadlines for applying may vary from year to year.

Most of the programs listed in this booklet are restricted to members of minority groups. However, a few general interest programs are cited because they should be of special interest to minority group members.

Each entry is numbered and these numbers are used in the index to help students more quickly identify awards which may be of interest. However, we recommend going through the entire booklet, page by page, rather than just relying on the index to pinpoint appropriate programs.

This booklet cites only those programs restricted to students in engineering and science. A companion booklet in this series should also be consulted: Financial Aid for Minority Students: Awards Open to Students With Majors in Any Field. This lists hundreds of programs, including many for which engineering and science students may be eligible.

In addition to these awards made by national and regional organizations, individual colleges and universities also administer financial aid. For that reason, be sure to contact the financial aid director at institutions which interest you. Your local counselor can be a key source of help in this area.

1. AEROSPACE CORPORATION
   College Relations Office M1/037
   P.O. Box 92957
   Los Angeles, CA 90009

   Engineering and science students attending colleges or universities in the Los Angeles area are eligible for fellowships of $3,600 a year plus tuition. Also paid employment for 20 hours per week.

2. ALFRED P. SLOAN FOUNDATION
   630 Fifth Avenue
   New York, NY 10111
   Ninety Sloan Research Fellowships are awarded to scientists in teaching positions who are particularly in need of

assistance in carrying on research along with their teaching duties and who may have less adequate access to research facilities than scientists in government or industry.

3. ALUMINUM COMPANY OF AMERICA
805 K. Alcoa Building
Pittsburgh, PA 15219

To help recruit minority students, summer fellowships, personnel interns, and minority engineering programs are operated. High school students are eligible for work-study programs. Through a Guided Opportunities for Life Decisions program, minority employees are aided to move up in the organization.

4. AMERICAN ASSOCIATION FOR THE ADVANCEMENT OF SCIENCE
Office of Opportunities in Science
1776 Massachusetts Avenue, NW
Washington, DC 20036

A committee on Opportunities in Science, backed up by a full-time staff, seeks to help women, minorities, and the handicapped advance in the scientific professions.

AAAS has published Rosters of Minority and Women Professionals and has developed a roster of Puerto Ricans in science and engineering.

AAAS also offers paid summer internships in engineering media reporting. It operates a clearinghouse on financial aid sources for higher education including engineering.

5. AMERICAN ASSOCIATION OF PETROLEUM GEOLOGISTS GRANTS-IN-AID
Post Office Box 979
Tulsa, Oklahoma 74101

Grants-in-aid in support of graduate research projects leading to M.S. degree or undertaken in early stages of Ph.D. studies in geological sciences. Preference for research projects related to search for economic (sedimentary minerals or to environmental geology sedimentation, stratigraphy, paleontology, mineralogy, structure, geochemistry, or geophysics). Grants, normally, are not less than $1,000
Criteria: Imagination and originality evidenced in proposed project; possibility of contribution to knowledge of energy and mineral resources; the program of the specific university from which the proposal is submitted. (Applications by January 15; announcements of award by April 1).

6. AMERICAN CHEMICAL SOCIETY
1155 Sixteenth Street, NW
Washington, DC 20036

As a part of its service, the Society maintains a year-round Employment Clearing House. Members seeking job opportunities may register at no charge, and on a voluntary basis, identify themselves as a member of a minority group and/or women.

The Society operates Project SEED for economically disadvantaged high school students who have taken at least one year of chemistry. In this program students are hired for 10 weeks of supervised work in a business or government laboratory and are paid $1,000 for the summer.

7. AMERICAN CONGRESS ON SURVEYING AND MAPPING
210 Little Falls Street
Falls Church, Virginia 22046

The Wild Heerbrugg Geodetic Fellowship Award: Graduate fellowship in geodesy providing $3,000 annually. Applications judged on following criteria: (1) 30%, previous academic record; (2) 30%, applicant's statement of study objectives; (3) 15%, applicability of previous courses to graduate work in geodesy; (4) 20%, recommendation of faculty member; (5) 5%, financial need. Fellowship is renewable.

Criteria: Member of ACSM or student of accredited school sponsored by member of ACSM; must pursue graduate study in geodesy at an accredited school of choice. (Apply by January 15.)

8. AMERICAN CONSULTING ENGINEERS COUNCIL
1015 15th Street, NW, Suite 713
Washington, DC 20005

The Council publishes Directory of Minority Architectural and Engineering Firms. It includes a description of the services which they offer and lists minority firms.

9. AMERICAN GEOLOGICAL INSTITUTE
4220 King Street
Alexandria, VA 22302

The Institute makes funds available to minority students in the geological sciences to assist them in their studies. This is accomplished through the Minority Participation Program Scholarships. Awards are granted yearly in sums ranging from $500 to $2,000. Those eligible are geoscience majors who are United States citizens and American-born members of one of the following ethnic minority groups: American Black, Native American (American Indian, Eskimo,

Hawaiian, or Samoan) and Hispanics. the applicant must be a geoscience major with good academic records and be currently enrolled in an accredited institution as either an undergraduate or graduate student. The term "geoscience" is used broadly to include major study in the fields of geology, geophysics, geochemistry, hydrology and planetary geology. Application deadline is February 1 of each year.

Those interested in applying for the 1987-1988 academic year program should send their request to the address listed below in September, 1986 when the new forms will become available.

10A. AMERICAN GEOPHYSICAL UNION
2000 Florida Avenue, NW
Washington, DC 20009

The Union provides information and some financial aid for persons interested in a career in the atmospheric sciences.

10B. AMERICAN INDIAN SCIENCE AND ENGINEERING SOCIETY
Scholarship Committee
1310 College Ave., Suite 1220
Boulder, CO 80302

The AISES awards scholarships of $500 and $1,000 to those who are members of AISES.

11. AMERICAN INSTITUTE OF ARCHITECTS
1735 New York Avenue, NW
Washington, DC 20006

Minority students interested in the field of architecture are eligible for scholarships for study toward the bachelor's degree. The amount awarded depends upon the financial need of the student.

12. AMERICAN INSTITUTE OF PHYSICS
335 E 45th Street
New York, NY 10017

The Institute publishes information on study opportunities in its field. It publishes Physics: A Career for You?

13. AMERICAN INSTITUTE OF MINING, METALLURGICAL, AND PETROLEUM ENGINEERS, INC., WOMEN'S AUXILIARY (WAAME)
14th Floor, 345 East 47th Street
New York, NY 10017

The Auxiliary provides loans to assist undergrad and graduate students studying for a degree in engineering science, related to the ferrous, non-ferrous, nonmetallic, petroleum, and coal industries. Part of the educational

expenses of the recipient is offered as a loan. Recipient is expected to repay only 50% of the monies he or she has received from the Fund, with no interest charges, and after he or she graduates and is making a salary. Repayment must be completed within five years. Application deadline: March 15.

14. AMERICAN METEOROLOGICAL SOCIETY
45 Beacon Street
Boston, MA 02108-3693

The Society offers the Howard T. Orville Scholarship in Meteorology ($1,000) and the Howard H. Hanks, Jr. Scholarship in Meteorology ($500).

15. AMERICAN MUSEUM OF NATURAL HISTORY
Central Park West at 79 Street
New York, NY 10024

The Museum offers grants and fellowships in areas broadly related to its scientific and educational objectives. These areas include the fields of vertebrate zoology, invertebrate zoology (including entomology), paleozoology, anthropology, mineral sciences, and museum education as it relates to natural history museums or planetariums.

The Grants Program offers modes, short-term awards to cover research expenses intended principally to assist advanced pre-doctoral candidates and postdoctoral researchers.

Research and Museum Fellowships offer salary or stipend and modest expenses to a scholar while in residence at the American Museum or one of its field stations, to carry out a specific project within a prescribed time period. The period is usually for one year. Fellowships are available to candidates with a doctoral degree or its equivalent.

16. AMERICAN NUCLEAR SOCIETY
555 N. Kensington Avenue
La Grange Park, IL 60525

Through its Nuclear Engineering Education for the Disadvantaged program, the Society is providing financial support for students and facilities for institutions which train minority students. As this program develops, specific programs of service to students are made available. In a recent year, five students received $1,500 awards.

17. AMERICAN PHYSICAL SOCIETY
335 E 45th Street
New York, NY 10017

The Society provides scholarships of $2,000 a year to help selected minority students finance undergraduate training with a major in physics. Applications are due in the spring for study beginning in the coming fall.

18. AMERICAN PSYCHOLOGICAL ASSOCIATION
1200 17th Street, NW
Washington, DC 20036

The Minority Fellowship Program provides financial assistance to ethnic minority persons through a cost sharing arrangement with graduate psychology departments to cover tuition, fees, living maintenance stipend, etc. Deadline for application is December 31.

The Association's Guide to Graduate Study in Psychology cites around 400 programs as well as opportunities for financial aid. A recent book sold for $6.00.

Its Summer Congressional Internship program helps enrolled minority graduate students in psychology to work in a Congressional office during the summer and participate in a related series of seminars on issues of public policy and psychology. Stipends were provided for these students to learn more about and possibly participate in the legislative process.

19. AMERICAN SOCIETY OF BIOLOGICAL CHEMISTS
9650 Rockville Pike
Bethesda, MD 20814

The Society publishes a free booklet entitled Careers in Biochemistry. It operates the FASEB Placement Service which can be contacted at the above address.

20. AMERICAN SOCIETY FOR CELL BIOLOGY
9650 Rockville Pike
Rockville, MD 20814

The Society was formed to link professionals in the fields of cellular, molecular, and developmental biology. It has published a booklet Opportunities: Programs for Under-Represented Groups in Cell Biology which outlines its areas of assistance.

21. AMERICAN SOCIETY OF CIVIL ENGINEERS
345 E 47th Street
New York, NY 10017

Is Civil Engineering For You? provides a summary of opportunities in the field. A series of leaflets Careers in Civil Engineering cite opportunities in its specialties, such as in urban planning.

To introduce minority high school students to engineering careers, summer institutes are held on college campuses.

22. AMERICAN SOCIETY FOR ENGINEERING EDUCATION
11 Dupont Circle, Suite 100
Washington, DC 20036

With support from the Office of Naval Research, ONR Graduate Fellowships of $13,000 to $15,000 per year are offered for study in nine scientific and engineering fields.

23. AMERICAN SOCIETY FOR ENOLOGY AND VITICULTURE
P.O. Box 1855
Davis, CA 95617

The Society annually awards numerous scholarships to students pursuing a degree in enology, viticulture, or in a curriculum emphasizing a science basic to the wine and grape industry. All scholarship recommendations made by the Scholarship Committee are subject to final approval does not discriminate on the basis of race, color, nationality, religion, or sex. Previous applicants and recipients are eligible to reapply each year in open competition with new applicants.

24. AMERICAN SOCIETY OF HEATING, REFRIGERATING, AND AIR-CONDITIONING ENGINEERS, INC.
1791 Tulles
Atlanta, GA 30329

Graduate engineering students working on an ASHRAE research project (research in art and sciences of heating, ventilation, cooling and air-conditioning) are eligible for awards. Designated colleges send the name of the selected student and biographical information to Honors and Awards.

25. AMERICAN SOCIETY FOR MEDICAL TECHNOLOGY
330 Meadowfern Dr.
Houston, TX 77067

ASMT Education and Research Fund Graduate Scholarship: One scholarship in the amount of $1,000 annually awarded to

graduate student in medical technology or one of its clinical laboratory sciences or related sciences.

Criteria: Clinical laboratory practitioners or educators who: (1) fulfill requirements for admission or are enrolled in programs leading to a Masters or Ph.D. degree in Medical Technology or one of its clinical laboratory sciences or related sciences; (2) have been pursuing clinical laboratory performance for at least one year; and (3) are permanent residents and citizens of United States. (Apply well in advance of March 1 deadline.)

26. AMERICAN SOCIETY FOR METALS FOUNDATION
Scholarship Selection Committee
Metals Park, OH 44073

The American Society for Metals Foundation for Education and Research provides funding for thirty undergraduate scholarships in the amount of $500 each, for students in metallurgy at the sophomore level or above. These scholarships are offered to citizens of the United States of America, Canada or Mexico, and apply to attendance at colleges and universities in these three countries.

27. THE AMERICAN SOCIETY OF NAVAL ENGINEERS, INC.
1452 Duke Street
Alexandria, VA 22314

The Society sponsors a scholarship program to encourage students to enter the field of naval engineering and to support naval engineers seeking advanced education in the field.

Programs of study which apply to naval engineering include naval architecture, marine, mechanical, civil, electrical, and electronic engineering, and the physical sciences. Scholarship awards of $1,500 each are available. Support for undergraduate work is limited to the student's final one or two years of undergraduate education. Support for graduate education is limited to one year.

28. AMERICAN SOCIOLOGICAL ASSOCIATION
1722 N Street, NW
Washington, DC 20036

Doctoral fellowships of up to $6,500 are available to students interested in research on mental health issues of concern to minorities. Funds are provided by the Minority Resources Branch, Division of Biometry and Applied Sciences of the National Institute of Mental Health. Applications due in January.

29. AMERICAN WATER WORKS ASSOCIATION
6666 West Quincey Avenue
Denver, Colorado 80235

Academic Achievement Awards: Graduate students who have published master's or doctoral theses or dissertations in varied fields including zoology, the physical sciences, social sciences, business, agriculture, economics, and public administration. Three cash awards are granted ($500 for best thesis, $250 for second best, $125 for third). Subject of thesis must be of significant value to water supply field.

Criteria: Individuals who have published master's or doctoral theses or dissertations in any field of study from agriculture to zoology, public administration, and engineering; manuscript or thesis must be work of single author and the subject of significant value to water supply field.

30. AMOCO FOUNDATION, INC.
200 E Randolph Drive
Chicago, IL 60601

An amount of $3,400 is available for a four-year term for students majoring in geology, geophysics, or petroleum engineering. There is a special interest in minority students.

31. ARMCO INSURANCE GROUP
703 Curtis Street
Middletown, OH 45043

Minority students in engineering are eligible for scholarships of $2,000 per year for study toward the bachelor's degree. To be eligible, however, students must reside in an areas where an Armco facility is located.

32. ASSOCIATED GENERAL CONTRACTORS OF AMERICA
1957 E Street NW
Washington, DC 20006

The Education and Research Foundation of AGC provides scholarships for study of civil engineering and construction studies. These are usually four year awards of $1,500 per year. Also some funds are available to support study toward the master's in these fields. Applications are available in September and decisions on the awards are made in November.

33. ASSOCIATION OF BLACK ENGINEERS AND APPLIED SCIENTISTS
667 Merick, Room 6
Wayne State University
Detroit, MI 48202

This organization serves to encourage Black high school students to enter the field of engineering and, once enrolled, to continue to completion. Tutorial and job placement services are provided. A monthly newsletter and the annual Black Engineer are its publications.

34. ASSOCIATION OF OFFICIAL ANALYTICAL CHEMISTS
1111 N 19th Street, Suite 210
Arlington, VA 22209

The Harvey W. Wiley Scholarship is a scholarship award in the amount of $500 per year for a period of two years to cover the third and fourth years of college. Therefore, only sophomores may apply. The Association of Official Analytical Chemists accepts nominations for college students who are majoring in chemistry, microbiology and sciences related to these. Students in nursing, medical, dental or related training are not eligible to apply.

The awardee must have at least a "B" average during the first two years of undergraduate study, have good character and personality, demonstrate a need for financial assistance, and have the desire to serve in a chosen career of research, regulatory work, quality control, or teaching in an area of interest to the AOAC.

35A. ASSOCIATION FOR WOMEN IN ARCHITECTURE
304 S Broadway, Suite 524
Los Angeles, CA 90013

This organization is concerned with helping women prepare for and enter architecture. It offers several scholarships beginning at the second year of study.

35B. ASSOCIATION FOR WOMEN IN SCIENCE, INC.
1346 Connecticut Avenue, NW
Washington, DC 20036

The Association has a registry which lists thousands of women in the field of science and engineering.

Its AWIS Job Bulletin is published every three weeks and lists available openings all over the country.

36. ATLANTIC SALMON FEDERATION
P.O. Drawer C
Calais, ME 04619

Fellowships granted to students seeking to improve their knowledge or skills or develop new techniques in Atlantic salmon biology or management, or in related fields. Fellowships are available for purposes of professional upgrading, graduate studies, individual research, literary pursuits, and technical or management training. Fellowships range from $1,000 to $3,000 and are tenable at any accredited university or research laboratory, or in any active management program where specialized information on Atlantic salmon is available anywhere in the world. Criteria: United States or Canadian legal residents pursuing increased knowledge or skills in Atlantic salmon biology or management, or in related fields; applicants need not be in a degree program. (Apply by March 15.)

37. AT&T BELL LABORATORIES
Cooperative Research Fellowship Program for Minorities
Room HL 1C-101A
Short Hills, NJ 07078

College seniors planning graduate school in engineering, science, mathematics, or related fields are eligible for summer employment at the laboratory and scholarships during the school year. Awards are open to members of minority groups currently under-represented in the sciences or engineering. Scholarships provide tuition and fees plus a living stipend of $925 per month during the academic year.

38. BATTELLE COLUMBUS LABORATORIES
505 King Avenue
Columbus, OH 43201

Paid summer internships, for which minorities and women are sought, are available for engineering and science students.

39. BAUSCH AND LOMB SCIENCE AWARD COMMITTEE
Director of Admissions
University of Rochester
Rochester, New York 14627

Bausch and Lomb Science and Scholarship Program: Undergraduate scholarships in science, mathematics, engineering, nursing, pre-medical preparation providing, for four years, a range from $1,000 to $10,000 per year. Scholarships must be applied at the University of Rochester.

Criteria: Recipient of the Bausch and Lomb Honorary Science Award and Medal for having the best record in science studies during high school years; should take the

CEEB-SAT or ACT tests and have results sent to given address; the CSS Financial Aid form is also required. (Apply by January 15.)

40. BAY AREA ENGINEERING SOCIETIES' COMMITTEE FOR MANPOWER TRAINING, INC.
530 Howard Street, Second Floor
San Francisco, CA 94105

Women and minorities are given on-the-job training to help them enter and advance in the fields of architecture or engineering. A scholarship program helps participants pay for formal education at local colleges and universities.

41. BELL TELEPHONE LABORATORY
Engineering and Scholarship Program
Mountain Avenue
Murray Hill, New Jersey 07974

A program of scholarship support is offered to minority students in the field of engineering.

42. BOTANICAL SOCIETY OF AMERICA
Botanical Garden
New York, NY 10458

The Society distributes a booklet, Careers in Botany, to inform students about opportunities in this field. There is no charge for single copies of this publication.

43. BUFFALO (AREA) ENGINEERING AWARENESS FOR MINORITIES, INC.
c/o State University of New York at Buffalo
Fronczak Hall, Room 221
Amherst, NY 14260

BEAM was founded in 1982 to increase the number of Buffalo area minority high school students entering and successfully completing college programs in engineering. BEAM accomplishes its mission by identifying potential minority engineering students in grades 7 through 12 and by providing an effective pre-college program for selected students. The pre-college program is designed to link junior and senior high schools with local companies for presentations, demonstrations, and hands-on-projects.

44. BUSINESS AND PROFESSIONAL WOMEN'S FOUNDATION
Loan Fund for Women in Graduate Engineering Studies
2012 Massachusetts Avenue, NW
Washington, DC 20036

Loans up to $5,000 are made to assist women with years of work experience and those now completing undergraduate studies in acquiring graduate level engineering training. The program assists business, government, and education

groups who seek to place more women in professional engineering positions. Application deadline: April 20.

Criteria: Women who have been accepted for enrollment in a graduate degree program or a graduate level course of study at a school accredited by the Engineer's Council for Professional Development are eligible. Doctoral programs are not included. Applicants must have academic and/or work experience records showing career motivation and ability to complete courses of study. United States citizenship is required, and there must be a need for financial aid.

45. CARVER RESEARCH FOUNDATION
Tuskegee Institute
Tuskegee Institute, Alabama 36088

Graduate Research and Teaching Assistantships: Awards of $3,000 and up are granted to selected college graduates entering Tuskegee Institute's graduate programs in biology, chemistry, environmental science, agricultural sciences, food science, nutritional science, veterinary sciences, public health nutrition and engineering.

Criteria: College graduates who desire to enter Tuskegee Institute to undertake graduate programs leading to Master of Science degrees in biology, chemistry, environmental science, agricultural sciences, food science, nutritional science, veterinary sciences, public health nutrition, and engineering. (Apply by March 15.)

46. CHEMICAL INDUSTRY FOR MINORITIES IN ENGINEERING
P.O. Box 1931
Midland, MI 48640

This group encourages minorities to enter technical fields. It works with a number of associations and institutions to develop programs to aid minorities.

47. CHICAGO AREA PRE-COLLEGE ENGINEERING PROGRAM
300 W Adams Street, Room 1210
Chicago, IL 60606

CAPCEP is designed to increase the number of minorities (including women) in engineering and technical careers. It provides technical, financial, and administrative assistance to Chicago area public and private school systems to enrich the academic curriculum and develop student interest in these careers. A teacher training project is being conducted by the National College of Education.

48. CHINESE INSTITUTE OF ENGINEERS--USA
c/o Ting Kai Wu
2616 E Grubb Road
Wilmington, DE 19890

This is a professional organization which seeks to link engineers in the U.S. with their counterparts in Taiwan. It also helps students with information about the field and financial aid.

49. CIVIL AIR PATROL - USAF (NATIONAL HEADQUARTERS)
Scholarship and Grant Program ATTN: TT
National Headquarters, Civil Air Patrol
Maxwell Air Force Base, AL 36112-5572

Approximately 61 undergraduate one-year scholarships of various types are available in amounts varying from $500 to $1,500 to students in education (teacher training), science, aeronautical engineering, and humanities. Technical vocational grants are also available.

Criteria: Recipients must be graduated or about to graduate during the current academic year from a secondary school, or completing successfully, a college preparatory course in a field in which scholarship is awarded; must have earned the Civil Air Patrol Billy Mitchell Award or the Senior Rating in Level II of the Senior Training Program by December 31 preceding the April Application deadline; and must provide evidence of having been accepted for admission to an accredited school or college. (Apply by April 1).

50. CLEVELAND MINORITIES IN ENGINEERING FORUM, INC.
c/o The Standard Oil Company (Ohio)
1442 Midland Building
Cleveland, OH 44115

SMEF is a consortium of industry and the Cleveland Public School System, founded in 1980 to help minority students prepare for college degrees.

51. COLLEGE ENTRANCE EXAMINATION BOARD
45 Columbus Avenue
New York, NY 10023

With support from the General Electric Foundation, minority students finishing at two-year colleges are eligible for scholarships to be used at a four-year institution to complete the requirements for a bachelor's degree in engineering. Grants are for one year, but may be renewed for a second year on the basis of academic progress.

52. COLORADO MINORITY ENGINEERING ASSOCIATION
c/o College of Engineering
1100 Fourteenth Street
Denver, CO 80202

Colorado's six engineering schools encourage minority students to enroll and graduate as engineers. A pre-college program assists high school students in mathematics, engineering, and science courses. This special program also includes efforts in recruitment and admissions, matriculation, counseling, career development, financial support, and summer and part-time employment in engineering-related fields. Participating colleges are the University of Colorado at Boulder, Colorado School of Mines, Colorado State University at Fort Collins, University of Colorado at Denver, University of Colorado at Colorado Springs, and the University of Southern Colorado at Pueblo.

53. COMMITTEE ON INSTITUTIONAL COOPERATION
Minorities Fellowships Program
Kirkwood Hall 111
Indiana University
Bloomington, IN 47405

CIC Minorities Fellowships provide support for four academic years to members of specific under-represented minority groups to support study for a Ph.D. at one of the following member institutions: the University of Chicago, the University of Illinois, Indiana University, the University of Iowa, the University of Michigan, Michigan State University, the University of Minnesota, Northwestern University, the Ohio State University, Purdue University, and the University of Wisconsin. Approximately 40 fellowships providing full tuition and academic year stipend of up to $8,000 are awarded annually in the humanities, social sciences, sciences and engineering.

54. COMPREHENSIVE MATH & SCIENCE PROGRAM
c/o Columbia University
School of Engineering and Applied Science
510 SW Mudd Building
New York, NY 10027

This program operates as a collaborative with the New York City Board of Education, locally-based engineering colleges, and industry. It is involved in engineering career guidance centered around students in the inner-city high schools.

Programmatic support by the engineering colleges is in the form of engineering college students who serve as tutors in scheduled visits to the CMSP classrooms. Student tutorial activities are supervised by college faculty, while

industry provides scientists, engineers, and managers who engage in engineering career seminars. There are approximately 2,500 students currently participating in the program.

55. COOPER UNION FOR THE ADVANCEMENT OF SCIENCE AND ART
Cooper Square
New York, NY 10003

This unique school offers a free college education to students who meet its rather exacting standards. Must take a battery of tests to qualify. Offers majors in various science and engineering fields on a tuition free basis. Apply in the fall for the next school year.

56. COUNCIL OF ENERGY RESOURCE TRIBES
1580 Logan St., Suite 400
Denver, CO 80203

The Council offers scholarships to American Indian undergraduate students in the fields of engineering, science, business or related fields. Scholarships are for one academic year. The Council has sponsored summer academic seminars through Colorado College to help Native American students enhance their academic skills, earn college credit, and begin their collegiate careers in energy-related fields.

57. CYSTIC FIBROSIS FOUNDATION
6000 Executive Blvd.
Suite 309
Rockville, MD 20852

Research Fellowships in Cystic Fibrosis and Related Problems: Limited number of fellowships annually awarded to post-doctoral applicants engaged in or planning scientific research in varied areas. Awards are for $10,000 a year, $500 for each dependent up to three and $500 for each year of relevant experience up to three years. Renewable for second year.

Criteria: Post-doctoral applicants pursuing or planning research in molecular biology, genetics, immunology, histology, tissue culture, physiology or bio-chemistry or endocrine glands, pharmacology, membrance permeability and transport, or micropolysaccharide chemistry

58. DANIEL AND FLORENCE GUGGENHEIM FOUNDATION
California Institute of Technology
1201 East California Boulevard
Pasadena, California 91125

OR
COLUMBIA UNIVERSITY
New York, New York 10027

OR
PRINCETON UNIVERSITY
Princeton, New Jersey 08540

Nine or more awards of full tuition and stipends of up to $2,400 are granted annually to United States or Canadian residents for training for engineering and scientific leadership in development of space flight, rocket propulsion, and flight structures.

Criteria: Must be a United States or Canadian resident; preferably under thirty years of age, and be a qualified engineering or science student prepared for graduate study.

59. DETROIT AREA PRE-COLLEGE ENGINEERING PROGRAM
Rackham Memorial Building
60 Farnsworth
Detroit, MI 48202

Six universities participate in this program including inner-city Detroit high school students who work and study for six to eight weeks in engineering and related fields. Participating universities are: Michigan State, Wayne State, University of Detroit, the University of Michigan at Ann Arbor and Dearborn, and Oakland University.

60A. DEVELOPMENT FUND FOR BLACK STUDENTS IN SCIENCE AND TECHNOLOGY
5331 Georgia Avenue, NW
Washington, DC 20011

The Fund is seeking 100 Black scientists, engineers, and other technologists who will contribute a minimum of $1,000 per year for Black undergraduate students. The purpose of the Fund is to establish an endowment fund to provide scholarships to Black students who choose technical fields of study at historically Black institutions of higher learning.

60B. DEVRY, INC.
2201 W. Howard Street
Evanston, IL 60202

The Devry chain of schools offers 70 awards to students interested in studying electronics engineering technology or computer information science. Awards are to be used at a local Devry school and are open to high school graduates with good SAT or ACT test scores.

61. DIGITAL EQUIPMENT CORPORATION
2500 West Union Hills Drive
Phoenix, AZ 85027

This firm offers a minority education scholarship for the last two years of college. Eligible are majors in electrical, mechanical, or industrial engineering and computer science.

62. DISTRICT OF COLUMBIA METROPOLITAN CONSORTIUM FOR MINORITIES IN ENGINEERING
Howard University
2300 6th Street, NW
Washington, DC 20059

The primary objective of the Consortium is to increase the number of students from minority groups interested in engineering as a career. The Consortium, in addition to the pre-college effort programs, also provides engineering enrichment training.

The work experience program provides selected students with technically oriented exposure to day-to-day work of engineers and scientists in the National Oceanic and Atmospheric Administration.

63. EARNEST AND MARY HAYWARD WEIR FOUNDATION
c/o American Security & Trust Company
730 15th Street, NW
Washington, DC 20013

Grants varying in amounts to provide broad medical career programs for Blacks, Puerto Ricans, and other disadvantaged minorities. Grants are offered for specified periods of one to three years and sometimes are extended.
Criteria: Qualified institutions with appropriate interests may apply; no grants made directly to individuals. No formal application requirements exist; letters of explanation and budgetary planning are helpful.

64. EARTHWATCH SCHOLARSHIP PROGRAM
Box 403
Watertown, MA 02272

Awards in ecology, biology, marine science, other natural and social sciences which provide no cash award but an opportunity to work in the field with a professional scientist on a research expedition. Participants pay their own way, live for weeks in tents under field conditions, and work hard on project undertaken.

Criteria: Keen mind, agile imagination, a unique capability for research and discovery; ability to live and work with other people under difficult circumstances;

minimum age 16 by January 1; (Apply after October 1; write for official application forms and instruction; winners announced by April 15.)

65. E.I. DUPONT COMPANY
Wilmington, Delaware 19898

Scientific Support; One hundred sixty-five colleges and universities have received funds for fellowships and special projects to encourage more minority group students to consider science and engineering careers.

66. EPILEPSY FOUNDATION OF AMERICA
4351 Garden City Drive
Landover, MD 20785

Research grants for a maximum amount of $12,000 for a one-year period, intended to support basic and clinical research in the biological, behavioral, and social sciences that will advance the understanding, treatment, and prevention of epilepsy. Recipients may not use funds to buy permanent equipment, for salary support of senior professional personnel, or for indirect costs.
Criteria: Research projects must be conducted within the territorial United States; priority given to new or innovative projects and to investigators just entering the field of epilepsy research; awarded for support of basic and clinical research in the biological, behavioral, and social sciences that will further the prevention, understanding, and treatment of epilepsy. (Apply by August 1.)

67. EXXON COMPANY, U.S.A.
P.O. Box 2180
Houston, Texas 77252-2180

Early Minority Identification Program: Designed to identify talented minority young students in science and engineering fields and to offer them summer jobs.

Criteria: Talented minority young students in science and engineering fields.

68. FORD FOUNDATION
320 East 43rd Street
New York, New York 10017

Graduate Fellowships for American Indians: Unspecified number of graduate fellowships for American Indians in the natural sciences, social sciences, or the humanities. Fellowships include tuition and fees, $300 allowance for books, and dependency allowance.

Criteria: American Indian citizens of U.S. who are enrolled or plan to enroll, full-time, in graduate school pursuing a Ph.D. in the natural sciences; must plan to continue or enter a career in higher education. (Apply by January 5.)

69. FORD MOTOR COMPANY
The American Road
Dearborn, Michigan 48121

Funds are provided to help ten engineering schools at the following institutions recruit and support more Black students: University of Dayton, Lawrence Institute of Technology, University of Michigan, Oakland University, Wayne State University, University of Detroit, Michigan State University, North Carolina A & T University, Southern University, and Western Michigan University.

70. FORUM TO ADVANCE MINORITIES IN ENGINEERING
Room N-13535, Tenth and Orange Streets
Wilmington, DE 19898

FAME was formed to increase the number of minority students preparing for engineering studies. Its goal is to motivate students to pursue and succeed in science and mathematics. It exposes students to cultural, academic, and industrial environments; provides minority engineering and technical role models; and develops a broad-based, long-term community commitment.

FAME administers several school-year activities as well as summer enrichment programs in cooperation with the University of Delaware and industrial sponsors. Some of these programs involve Saturday science and calculus clubs, tutorial programs, and pre-freshman employment.

71. GATEWAY TO ENGINEERING, SCIENCE, AND TECHNOLOGY
University of Wisconsin
P.O. Box 784
Milwaukee, WI 53201

GEST recruits capable minority secondary school students who are introduced to college-level work in technical fields. They are also eligible for a special summer program in engineering design and mathematics.

72. GENERAL ELECTRIC FOUNDATION
3135 Oakton Turnpike
Fairfield, CT 06431

To help students learn about technical careers a series of free books are distributed. Titles include Planning Your Career. So you want to go to Work? What's It Like To Be

An Engineer? What's it Like to Work With Computers? and What's it Like to be a Technician?

It funds scholarships for undergraduates at four-year engineering schools-funded through the National Council on Minorities in Engineering and to community college students transferring to four-year engineering programs administered on behalf of the Foundation by the College Board. New in 1986 is the merit-based Minority Engineering Scholars Program, established by the Foundation at eight key engineering schools: Cornell, MIT, North Carolina State, Georgia Tech. Texas A&M, Michigan-Ann Arbor, Illinois Urbana-Champaign and Purdue.

73. GENERAL MOTORS INSTITUTE
1700 W Third Avenue
Flint, MI 49502

The Pre-Engineering and Management Program is a non-degree educational program designed to prepare both men and women from disadvantaged and minority backgrounds for admission to the Institute. The Program lasts for one year and includes alternating six-week periods of study at GMI and work experience with a participating General Motors Corporation plant or office. Candidates must be high school graduates and selected by both GMI and the potential employer with, the Corporation. Sponsoring units are located all over the country.

74. GEOLOGICAL SOCIETY OF AMERICA
3300 Penrose Place
Boulder, CO 80301

A limited number of awards are made each year to support research activities in geology.

75. GOLDEN CRESCENT ALLIANCE FOR MINORITIES IN ENGINEERING
c/o E. Suzanne Suggs
Union Carbide Corporation
P.O. Box 186
Port Lavaca, TX 77979

GCAME seeks to increase minority representation in engineering and other technical fields. Every effort is made to identify students with engineering potential as early as possible and encourage their preparation for admittance to colleges or universities. Selection is by math, science, and English scores of achievement tests.

76. HERCULES INCORPORATED
910 Market Street
Wilmington, DE 19894

To assist minority engineers, Hercules has developed a three-part program. It first offers scholarships and guarantees those recipients summer jobs. Finally, it offers the colleges help for the development of their engineering program.

The participating schools are: MIT, University of Delaware, Howard University, Tenn. St. University, North Carolina State University, Georgia Tech., Southern Univ., Prairie View University, A&M College, NM St. University, University of NM.

77A. HERTZ (FANNIE AND JOHN) FOUNDATION
Box 2230
Livermore, CA 94550

Hertz (Fannie and John) Fellowships: Approximately 28 graduate fellowships in applied physical sciences which provide $12,500 plus up to $7,000 for tuition and fees for a 9 month academic year; fellowships may be renewed.

Criteria: United States citizen; must have a B.A. degree with GPA of A- at time of starting Fellowship; must sign agreement indicating intent to make personal skills and abilities available to the defense of United States during national emergency situations; must relinquish all other awards; must have American history background. (Apply by November 1.)

77B. HUGHES AIRCRAFT COMPANY
Fellowship and Rotation Programs
Technical Education Center
P.O. Box 45066 (Bldg C1/MS B168)
Los Angeles, CA 90045

The Hughes Fellowship Program: Awards are made for formal graduate study programs leading to Masters, Engineer or Doctoral degrees. Most awards are work-study grants to Fellows who will be attending selected universities in the vicinity of a Hughes facility. Work-study Fellows work full-time at Hughes during the summer in their field of specialization. During the academic year, they carry at least half of the normal study program at the university and work a minimum of 20 hours per week at a Hughes facility. A limited number of full-study awards are made in which Fellows work full-time during the summer at Hughes, then depart for a distant university where they study full-time during the academic year. A Hughes

Fellowship will be worth from $25,000 to $50,000. This amount includes professional salary and other benefits received during work periods, a Fellowship stipend, full academic expenses including book allowance, and necessary travel and relocation expenses.

78. THE INSTITUTE OF PAPER CHEMISTRY
P.O. Box 1039
Appleton, Wisconsin 54912

Fellowship Stipends and Tuition Scholarships: Graduate awards in chemistry, physics, biology, mathematics, and paper science. Fellowships are $6,750 for academic year. Scholarship stipends are $3,00 for academic year. Criteria: Holder of B.S. degree in chemistry or chemical engineering and GPA of at least a 3.0 on a 4.0 scale; must present GRE scores; fellowship stipends are granted only to United States and Canadian students.• (Apply by March 15.)

79. INSTITUTE OF TRANSPORTATION ENGINEERING
Equal Opportunities Coordinating Center
820 Davis Street
Evanston, IL 60201

The Center was established to encourage the entrance of minorities into the transportation engineering field. It hopes that 60 new engineers a year may come from minority groups in the mid-1980's. It participates in recruiting projects in high schools and prepares career materials to motivate and inform both secondary school and college students.

80. INTERNATIONAL BUSINESS MACHINES CORPORATION
Manager, University and Scientific Relations
Thomas J. Watson Research Center
P.O. Box 218
Yorktown Heights, NY 10598

Awards are available for minorities and women for graduate study in the fields of mathematics, physical science, electrical and mechanical engineering, and in computer or information science. These include $10,000 for support for study toward a master's or doctor's degree during the academic year and a departmental grant of $2,000. Appointments are made in consultation with university graduate departments in these fields. Applications should be submitted to universities which make the awards.

81. INTERNATIONAL WOMEN'S FISHING ASSOCIATION
Post Office Box 3125
Palm Beach, Florida 33480

Scholarships in marine science to aid needy students who seek post-graduate degrees in the field; scholarships vary

in amount and are renewable on annual reapplication. Scholarships are intended for basic educational expense (tuition, supplies and books). Up to $3,000 per year for study in marine science.

82. JAMES ASSOCIATES ARCHITECTS AND ENGINEERS
P.O. Box 55809
2828 E 45th Street
Indianapolis, IN 46205

The James Associates Minority Scholarship Program for Black high school seniors interested in pursuing careers in architecture and related areas includes $1,000 a year for five consecutive years as well as professional counseling services by members of the James Associates staff. The recipient also receives summer in-serve training employment at one of the firm's offices in Indianapolis, Fort Wayne, or Lafayette.

Any Indiana Black high school senior, who ranks in the upper one-quarter of his or her class or otherwise receives the recommendation of the school's principal, is eligible.

83. JUNIOR ENGINEERING TECHNICAL SOCIETY (JETS)
1420 King Street
Alexandria, VA 22314

JETS was formed to help introduce young people to technical fields and to help recruit them for study in engineering, science, mathematics, and technology. It offers the NEAS test to help students determine fields of study and work which might be appropriate for them. It also has published a leaflet, A Guide to Financial Aid for the College Bound Student. Local JETS chapters work with students in their areas.

84. KENNECOTT COPPER CORPORATION
10 Stamford Forum
Stamford, CT 06904

Scholarships of up to $1,000 for one year of study are awarded to students in various engineering fields, particularly those concerned with mining and minerals.

85. KODAK COMPANY
Financial Aid Committee
Rochester, NY 14650

Kodak offers several financial aid programs to help students in science fields. Its Minority Academic program makes grants to cover 75 percent of the cost of tuition to minority female students in engineering and science.

86. KOPPERS COMPANY, INC.
Pittsburgh, PA 15219

Grants for minority and female engineering students are available in chemical, mechanical, or electrical engineering. Koppers awards funds to engineering departments and leaves the selection process to the college.

87. LEAKEY FOUNDATION
Foundation Center 1-7
Pasadena, CA 01125

The Foundation makes awards to science graduate students and to scientists for study and research. Grants may range from $3,000 to $5,000.

88. LAWRENCE LIVERMORE LABORATORY
P.O. Box 808
Livermore, CA 94500

The Summer Institute for Faculty enriches the research and educational programs of colleges with high enrollments of minorities, women,and handicapped students. The Institute also provides an opportunity for Laboratory staff to interact with the academic community. Participants work full-time for nine weeks.

The Summer Student Internship Program provides full-time degree-related summer employment to college students and college-bound high school students. The program acquaints students with laboratory expertise, facilities, and research equipment. Most assignments are in science or engineering disciplines. Students work full-time for 12 weeks.

89. LINCOLN LABORATORY
Massachusetts Institute of Technology
Lexington, MA 02173

The program hires Black students in technical fields during the summer--most come from a predominantly Black college and must be majoring in electrical engineering or physics. Later, part-time jobs may be available for those students who pursue graduate work at MIT.

90. THE LOS ANGELES COUNCIL OF BLACK PROFESSIONAL ENGINEERS
1600 W Imperial Highway
Los Angeles, CA 90047

LACBPE was formed for the purpose of motivating students from minority communities to consider engineering as a profession. These activities include a youth motivation program, student recruitment and retainment, summer work exposure, and an awards and achievement program.

91. LOS ANGELES URBAN LEAGUE
3450 Mount Vernon Drive
Los Angeles, CA 90008

The League operates the New National Skills Bank, which specializes in helping minority group members locate positions in the aerospace industry.

92. LOUISIANA ENGINEERING ADVANCEMENT PROGRAM FOR MINORITIES, INC.
Xavier University of Louisiana
7325 Palmetto Street
New Orleans, LA 70125

LEAP operates out of centers located in New Orleans and Lake Charles, Louisiana. Its primary purpose is to foster an interest in engineering-related careers on the part of minority high school students.

93. LUBBOCK ALLIANCE FOR MINORITIES IN ENGINEERING
2010 Avenue R, Room 323
Lubbock, TX 79411

The Alliance is a minority engineering development operation. Its functions center on providing student exposure through career days, poster contests, and visits by industry representatives to junior high schools in the area.

94. McKNIGHT BLACK DOCTORAL FELLOWSHIP PROGRAM
201 E. Kennedy Boulevard, Suite 1510
Tampa, FL 33602

Designed to increase the representation of Black Americans with Ph.D.'s on the staff of colleges and universities in Florida, this program offers around 25 fellowships a year for graduate study. Each award is for tuition at one of the 12 participating Florida universities plus an annual stipend of $10,000.

Programs are for study at the graduate level and support may be provided for up to three years. Candidates should hold a bachelor's or master's degree. Candidates wishing graduate programs in science, mathematics, agriculture, and psychology are particularly sought.

95A. MANAGEMENT ASSOCIATION OF PRIVATE PHOTOGRAMMETRY SURVEYING
12900 Sleepy Hollow Road
Librant, PA 15129²R

Scholarship available to undergraduate and graduate students enrolled in a course of study that uses the

science of photogrammetry, photo interpretation, and remote sensing. These studies include geology, geodetic sciences, forestry, geography and engineering. A one-year scholarship for $1,500 is awarded annually.

95B. MARY BUNTING INSTITUTE
10 Garden Street
Cambridge, MA 02138

The Institute is located in the Radcliffe College area and offers research support for either one or two years to women who already hold a recent doctorate in the sciences or engineering.

96. MASSACHUSETTS PRE-ENGINEERING PROGRAM FOR MINORITY STUDENTS, INC.
Wentworth Institute of Technology
550 Huntington Avenue
Boston, MA 02115

MASS-PEP began in the Boston and Cambridge, Massachusetts public school systems in 1979. Saturday computer programs and a Consortium Summer Program are conducted in conjunction with local schools and colleges of engineering. A summer program for teachers focuses on career counseling training as well as providing access to a variety of business and government organizations.

97. MATHEMATICS, ENGINEERING, SCIENCE ACHIEVEMENT PROGRAM--CALIFORNIA

MESA promotes more involvement of minorities in engineering and science by sponsoring summer institutes to help students overcome inadequate high school preparation and to enter college. It also works through 113 high schools.

MESA centers serve around 3,000 students a year. They take field trips, have special tutoring, and receive counseling relative to their entering the field. The centers, all in California, are located in Sacramento, Berkeley, San Jose, Stanford, Santa Barbara, Northridge, Los Angeles (3), and Long Beach. The best way to locate the nearest MESA center is to call the nearest collegiate engineering school.

98. MATHEMATICS, ENGINEERING, SCIENCE ACHIEVEMENT PROGRAM--MARYLAND
The John Hopkins University
Applied Physics Laboratory
John Hopkins Road
Laurel, MD 20707

MESA sponsors pre-college programs at the junior and senior high school level for those who are interested in further

development in science and mathematics. In addition to educational enrichment, practical assistance is provided in preparing students for university level programs, especially in the sciences.

99. MATHEMATICS, ENGINEERING, SCIENCE ACHIEVEMENT PROGRAM--NEW MEXICO
Farris Center 345
University of New Mexico
Albuquerque, NM 87131

This MESA project works with minority students in New Mexico to acquaint them with opportunities in technical fields and to prepare them to enter appropriate college programs.

100. MATHEMATICS, ENGINEERING, SCIENCE ACHIEVEMENT PROGRAM--WASHINGTON
College of Engineering
University of Washington
216 Roberts FB-10
Seattle, WA 98195

The Washington MESA program helps students to participate in a college preparatory course followed by four years of mathematics, science, and English. MESA provides participating students with six major activities designed to enrich their regular educational programs. These activities involve tutoring, independent study groups, academic/university/career.

101. MEXICAN-AMERICAN ENGINEERING SOCIETY
242 St. Cloud
Friendswood, TX 77546

MAES sponsors Mexican-American engineering and science students. It provides college students with a positive professional experience where role models can be identified and career opportunities explored.

102. MID-MICHIGAN MINORITY PRE-ENGINEERING PROGRAM
P.O. Box 1382
Midland, MI 48640

This program identifies minority and other educationally disadvantaged youth who demonstrate the potential for achieving a technical education. It then encourages and aids in education leading to careers in technical disciplines.

103. MINORITY ENGINEER
44 Broadway
Greenlawn, NY 11740

This publication offers a free resume service for minority group members. Copies of qualifications are sent free of charge to interested employers.

104. MINORITY MANPOWER RESOURCES PROJECT
University of Houston-University Park
4800 Calhoun
Houston, TX 77004

MMRP identifies promising minority high school seniors who are interested in engineering, computerscience, or business. It helps to locate employment for these students with major companies during the summer preceding their first college semester and to provide counseling for the students and an expanding pool of minority college graduates from which participating companies may recruit employees.

105. NATIONAL ACADEMY OF ENGINEERING
2101 Constitution Avenue, NW
Washington, DC 20037

The Academy wants to increase the number of minority group students enrolled in engineering. This has been aided by the establishment of a National Advisory Council on Minorities in Engineering.

106. NATIONAL ACTION COUNCIL FOR MINORITIES IN ENGINEERING, INC.
3 W 35th Street
New York, NY 10001

NACME's goal is to assure that minorities will be represented in engineering colleges at the same level as they are in the college-age population at large. It provides financial aid to more than 3,000 minority engineering students--2.5 million dollars yearly--through direct grants to engineering colleges. Individual students receive from $250 to $2,000 per year. NACME has identified minority high school students with the interest in and potential to study engineering and makes their names available to engineering colleges.

It coordinates a summer employment program that provides orientation to engineering and world of work to NACME-funded students. A variety of materials--films, brochures, and pamphlets--are distributed to inform students and others about the desirability of an engineering career for minorities. This includes the Pre-College Program Directory which sells for $12.00, with shipping. How to Study Smartly, a booklet designed for excellence, is

distributed free by the Council. It publishes a Directory of NACME Scholars which is given free to contributing corporations.

107. NATIONAL AERONAUTICS AND SPACE ADMINISTRATION
Washington, DC 20546

This federal agency has offered minority students awards in the past and students should write for current information. It operates a graduate student researchers program which makes awards of up to $12,000 a year to help those interested in conducting thesis research at a NASA facility.

108. NATIONAL ASSOCIATION OF PRECOLLEGE DIRECTORS
c/o Constance M. Mitchell, Chairperson
PRIS^{2}M, Industrial Management Council
12 Mortimer Street
Rochester, NY 14604

The Association publishes a booklet Promoting Success Through Collaborative Ventures In Precollege Science and Mathematics which describes 19 programs and helps to recruit more minority students for technical studies.

109. NATIONAL CENTER FOR ATMOSPHERIC RESEARCH
P.O. Box 3000
Boulder, CO 80307

The Center is an independent research and teaching organization sponsored by the National Science Foundation.

It makes a number of postdoctoral appointments for persons trained in the science with stipends of around $22,000 per year.

It also supports persons working toward the doctorate in various atmospheric sciences through a research assistantship program. The appointment with the NCAR provides support of around $10,600 for time at NCAR where the person does the research and prepares a thesis. This is usually somewhat less than two years.

There is no formal date for submission of applications, they are received and processed all during the year. For information contact the Administrator, Advanced Study Programs.
College students in appropriate scientific and engineering fields are eligible for paid summer research internships at Boulder. Must apply by January for the coming summer.

110. NATIONAL CHICANO COUNCIL ON HIGHER EDUCATION
710 N. College Avenue
Clarmont, CA 91711

Hispanic Americans are eligible for fellowships for their final two years of undergraduate study and for graduate training. Should be interested in making college teaching their career. Eligible are those in fields of engineering, science, mathematics, and computers.

111. NATIONAL CONSORTIUM FOR BLACK PROFESSIONAL DEVELOPMENT
2307 Taylorsville Road
Louisville, KY 40205

The Consortium makes awards of from $4,500 to $7,000 for students interested in graduate study in one of the agricultural sciences. Awards are limited to study at one of nine universities.

112. NATIONAL CONSORTIUM FOR GRADUATE DEGREES FOR MINORITIES IN ENGINEERING, INC.
University of Notre Dame, Box 537
Notre Dame, IN 46556

The Consortium provides minority students with work experience opportunities with research centers and this is combined with two years of graduate master's training in engineering. This is a cooperative program developed by 30 colleges and universities and 8 research centers. Each student participant receives a $5,000 annual stipend for living expenses plus tuition plus income from the summer job. Around 100 awards are made each year to minority students.

113. NATIONAL FOUR-H COUNCIL
7100 Connecticut, NW
Chevy Chase, MD 20815

The Council offers around 260 scholarships for college study, primarily in agriculture, home economics, forestry, and related fields. For information, contact the financial aid office at a university offering instruction in these fields.

114. NATIONAL INSTITUTES OF HEALTH
Room 9A-18, Westwood Building
Bethesda, MD 20205

The Minority Access to Research Career Program provides fellowships for teachers in colleges with high minority enrollments. Awards are for doctoral study or research. Amount varies with basic salary of recipient up to a ceiling of $25,000.

115. NATIONAL OCEANIC AND ATMOSPHERE ADMINISTRATION
Recruiting Coordinator
105 Rockwall Building
11400 Rockville Pike
Rockville, MD 20852

NOAA offers careers to persons interested in oceanography, fisheries research, or related fields. Must have a bachelor's degree with some courses in calculus and physics. Candidates are given marine training and assigned to a commissioned force of around 400.

116. NATIONAL OPTOMETRIC ASSOCIATION
2838 S. Indiana Ave.
Chicago, Illinois 60616

Emergency financial support to minority optometric students is offered.

117. NATIONAL RESEARCH COUNCIL
Fellowship Office
2101 Constitution Ave. NW
Washington, DC 20418

Minority Graduate Fellowships are available for work leading to the doctor's or master's in mathematics, science, or engineering.

Awards are made for up to $12,000 for a 12 month period, with eligibility restricted to persons near or beginning their graduate studies. There are no allowances for dependents for travel.

Applications are due in November and forms and other materials should be requested well in advance of that time.

Graduate Fellowships, not restricted to minorities, are also offered by the Council and also supported by the National Science Foundation. The requirements and other conditions are almost identical to the minority fellowships.

Minorities are also eligible for a special Ford Foundation program providing funds to help students complete dissertations.

118. NATIONAL SCIENCE FOUNDATION
Washington, DC 20550

The Minority Research Initiation Program provides funds to help minority faculty members in the science area take time

from their regular teaching duties to do some research. Grants are made to the employing institution and the teaching time of the faculty member is reduced to allow an opportunity for research.

119. NATIONAL SOCIETY OF BLACK ENGINEERS
915 15th Street, NW, Suite 600
Washington, DC 20005

This is an organization of engineering students. It seeks to increase minority participation in the field of engineering and to encourage the professional development of its 4,000 members. It works with student groups on college campuses. A newsletter announces the availability of its members for employment and an annual conference is held.

120. NATIONAL SOCIETY OF PROFESSIONAL ENGINEERS
2029 K Street, NW
Washington, DC 20008

The Education Foundation of the Society awards a number of scholarships. High school academic record and activities are important in the selection criteria. A fellowship for graduate study in management is also awarded. Three minority scholarships are available for college freshmen. The Society's booklet Engineering Scholarships for Graduating High School Students cites awards made by individual engineering colleges.

121. NATIONAL TECHNICAL ASSOCIATION
733 15th Street, Suite 940
Washington, DC 20005

This organization orients minority students to opportunities available in science and engineering by making career opportunity information available. Its publications include a monthly newsletter, a quarterly technical journal, and an annual compendium.

122. NATIVE AMERICAN ENGINEERING PROGRAM
c/o College of Engineering
University of New Mexico
Albuquerque, NM 87131

Two activities have been developed to aid Native American students. The first is the regular financial aid program to support Indians studying engineering. The second is a Summer Institute in Engineering to introduce Indian students to study in this area.

123. NATO FELLOWSHIP PROGRAM
Division of Scientific Personnel Improvement
National Science Foundation
NATO Fellowship Program Office
Washington, DC 20550

These fellowships, 9 or 12 months are intended for persons planning to enter upon or continue postdoctoral study in the sciences. Also included are interdisciplinary fields which are comprised of overlapping areas among two or more sciences. A list of the specific fields supported in this program is included in the application materials.

Recipients of this award are to study in a NATO country, other than the United States, or a neighboring country that cooperates with NATO.

124. OAK RIDGE ASSOCIATED UNIVERSITIES
P.O. Box 117
Oak Ridge, TN 27830

Research jobs are open in physical, biological, and environmental sciences as well as in engineering and mathematics for college juniors and higher. Around 75 jobs are available each year and include travel expenses.

Magnetic Fusion Fellowships are offered for graduate study in engineering related to fusion energy. Awards include full tuition and fees and a stipend of $14,000.

125. OFFICE OF NAVAL RESEARCH
c/o American Society for Engineering Education
Graduate Fellowships Office
11 Dupont Circle, NW / Suite 200
Washington, DC 20036

Awards of up to tuition and $13,000 living expenses are available for graduate study in engineering. Must apply in same year as receive bachelor's degree.

126. PHILADELPHIA REGIONAL INTRODUCTION FOR MINORITIES TO ENGINEERING
1831 Chestnut Street, Suite 5B
Philadelphia, PA 19103

This program orients Philadelphia-area minority about engineering career opportunities. All the Philadelphia-area engineering schools participate in the program.

127. PITTSBURGH REGIONAL ENGINEERING PROGRAM
Investment Building, Room 1402
239 Fourth Avenue
Pittsburgh, PA 15222

Sixteen major Pittsburgh corporations and 4 educational institutions sponsor PREP and its activities. This is an action program designed to create career awareness among students in the early grades and offers continuing engineering/science-related experience during the remaining school years.

Sponsoring educational institutions include: Carnegie-Mellon University, National Education Emergency Drive, Pennsylvania State University, Pittsburgh Board of Education, and the University of Pittsburgh.

128. PREFACE PROGRAM
c/o Farris Engineering Center
College of Engineering
University of New Mexico
Albuquerque, New Mexico 87131

The program offers a scholarship for students interested in engineering study.

129. PRE-UNIVERSITY PROGRAM FOR MINORITIES IN ENGINEERING
3200 S. Wabash Avenue
Chicago, IL 60616

This is a consortium operated by Chicago-area universities which seeks to prepare high school students for careers in engineering and other technical fields. Its concerns include informing students about careers, motivating and encouraging them to consider the fields, helping to identify sources of training, and helping to arrange for financial aid and other assistance.

130. PROCTOR AND GAMBLE
Ivorydale Technical Center
5299 Spring Grove Avenue
Cincinnati, OH 45217

The Summer Minority Research Program was developed to provide practical experience to college seniors or graduate students in science. These are fully paid research positions, and applications must be submitted by January.

131. PROGRAM FOR ROCHESTER TO INTEREST STUDENTS IN SCIENCE AND MATH
c/o The Industrial Management Council
12 Mortimer Street
Rochester, NY 14604

This operates under the sponsorship and fiscal support of the Industrial Management Council of Rochester, a local manufacturer's association. The focuses of its programs are on problem-solving science curricula for junior high students, summer workshops for selected students, formation of science teams of approximately 20 students each, internships for post-eleventh grade students, college orientation courses, and a role model support effort.

132. RALSTON PURINA COMPANY
Urban Programs Department
Checkerboard Square
St. Louis, Missouri 63199

Six graduate research fellowships in animal science providing $4,000 annually. Open to any individual qualified for graduate study in land-grant agricultural college. Apply by January 15.

133. RICHMOND AREA MINORITY ENGINEERING PROGRAM
P.O. Box 12467
Richmond, VA 23241

RAPME is committed to a long-term process of encouraging and motivating talented, high-potential minority students. Its objectives are the development of continuing programs which will result in the student gaining acceptance to a college of engineering; development of industry support of pre-college programs; and obtaining community educational, and industry resources to implement the required program.

134. SAN ANTONIO ALLIANCE FOR MINORITIES IN ENGINEERING
P.O. Box 2084
San Antonio, TX 78297

The Alliance provides supportive services for minorities to encourage them to enter engineering.

135. SANDIA NATIONAL LABORATORIES
P.O. Box 5800
Albuquerque, NM 87185

Newly-hired Sandia employees are eligible for a master's level program in a number of engineering fields. Work at Sandia after completing bachelor's degree until next school year begins. Then, while in graduate school, receive tuition, fees, books, and a living stipend. After

receiving master's move back to Sandia for permanent employment.

136. SCIENCE SERVICE
1719 N Street, N.W.
Washington, DC 20036

Science Talent Search: Forty scholarships and awards to high school seniors are annually awarded; ten four-year Westinghouse Science Scholarships, one $20,000 ($5,000 a year); two $15,000 ($3,750 a year); three $10,000 ($2,500 a year); four $7,500 ($1,875 a year); remaining 30 finalists each receive $1,000 Westinghouse Science Awards. Forty finalists are interviewed by judges at Science Talent Institute and winners determined after consideration of high school records, national test scores, recommendations of high school teachers, and written reports on independent research.

Criteria: To apply, high school seniors submit 1,000-word reports on independent science research projects by December 15.

137. SLOCUM-LUNZ FOUNDATION
c/o Dr. Charles K. Biernbaum
Grice Marine Biological Laboratory
205 Fort Johnson
Charleston, SC 29412

The Foundation provides scholarship and/or grant monies to be used in the support of scholars and educational institutions in the fields of marine biology and closely related natural sciences. Priority is given to candidates for the doctoral degree who plan to work in South Carolina at the completion of their education. Applications from beginning graduate students and advanced undergraduates will also be considered. Academic work does not have to be performed in South Carolina.

138. SMITHSONIAN INSTITUTION
Office of Fellowships and Grants
Washington, DC 20860

The Institution offers appointments to minorities and persons at historically Black colleges, to pursue either a research or internship project in residence. Two kinds of appointments are available.

Internships for students, either graduate students or upperclass undergraduate students to work on research or museum procedure projects in specific areas of history,

art, or science. Interns usually work for periods of nine weeks to twelve weeks, during the summer or academic year. Stipends range from $150 to $200 a week.

139. SOCIETY OF EXPLORATION GEOPHYSICISTS
P.O. Box 702740
Tulsa, OK 74170

The Scholarship Committee of the Society provides financial aid up to around $1,000 per year for selected students working toward a bachelor's or graduate degree in a geophysical field.

140. SOCIETY OF HISPANIC ENGINEERS
P.O. box 87
Main Post Office
Los Angeles, CA 90053

The Society encourages Hispanic students by offering financial aid for study toward the bachelor's degree in science and engineering. The exact amount varies with need and the availability of funds.

141. SOCIETY OF MINING ENGINEERS
Caller Box D
Littleton, CO 80127

The Society offers career information on opportunities in its field such as Careers for Engineers in the Minerals Industry, and The Great American Coal Challenge: What Part Will You Play?

142. SOCIETY OF NAVAL ARCHITECTS AND MARINE ENGINEERS
1 World Trade Center
New York, NY 10048

The Society offers five to eight graduate scholarships annually to encourage study in the fields of naval architecture and marine engineering, although awards are not necessarily limited to those subjects. The $10,000 to $12,000 scholarships usually cover the cost of tuition at the college selected plus a substantial sum to cover living expenses.

143. SOCIETY FOR TECHNICAL COMMUNICATIONS
815 15th Street, N.W.
Washington, DC 20005

Four to six scholarships are awarded annually to students pursuing established degree programs in preparation for careers as writers, editors, illustrators, or teachers in the profession of communicating information about physical, biological, medical and engineering sciences. Graduate students working toward master's or doctoral degrees and

undergraduate students who will qualify for upper-division standings in a bachelor's program may apply.

144. SOCIETY OF WOMEN ENGINEERS
United Engineering Center, Room 305
345 E 47th Street
New York, NY 10017

The Society administers approximately 30 scholarships annually, most of which are for undergraduate women. All seek to provide training in engineering. A fact booklet provides details. Applications are available by sending a self-addressed envelope to the above address.

145. SOIL CONSERVATION SOCIETY
7515 NE Ankeny Road
Ankeny, IA 50021

The Society offers 24 scholarships of $750 each to college sophomores majoring in a conservation-related subject.

146. SOUTHEASTERN CONSORTIUM FOR MINORITIES IN ENGINEERING
c/o Georgia Institute of Technology
208 Savant Building
Atlanta, GA 30332

The Consortium works to increase the number of minority students in engineering schools. It links 15 engineering schools in 6 states, as a part of its orientation and assistance program. Teacher training is an integral part of the program in introducing high school students to engineering.

147. THE SOUTHERN FELLOWSHIP FUND
795 Peachtree Street, N.E.
Atlanta, Georgia 30308

Graduate and Post-Graduate Fellowships for Black Americans: Pre-doctoral and post-doctoral fellowships to support Black prospective college teachers at predominately black institutions or grants-in-aid for research and study by administrative college personnel Pre-doctoral fellowships emphasize research and study in the basic biological and physical sciences with stipends ranging from $2,800 to $5,100 plus supplements for tuition and fees (dependency allowance must not exceed $1,200). Post-doctoral fellowships support professors pursuing an individualized program of research and study with stipends varying up to $7,500. Grants-in-aid vary up to maximum of $6,000 per year.

Criteria: Faculty or staff members and graduate students in colleges and universities attended by predominately Black students; opened also to qualified persons in other

institutions who plan to teach in predominately black colleges. (Apply by January 15.)

148. SOUTHWEST RESOURCE CENTER FOR SCIENCE AND ENGINEERING
Marion Hall 113
University of New Mexico
Albuquerque, NM 87131

The Center has offered post-doctoral fellowships in research for minority Ph.D.'s and one-term internships for faculty members.

149. STANDARD OIL COMPANY OF INDIANA
c/o Ms. Robbie Smith, Corporate Social Policy Department, MC 4307
200 E Randolph Drive, P.O. Box 5910-A
Chicago, IL 60680

The Company has prepared and distributes films and booklets to help minority students get a clearer picture of the opportunities in science and engineering.

150. TAILHOOK ASSOCIATION
P.O. Box 45308
Nas Minamar
San Diego, CA 92145

Four Captain Grant L. Donnelly Memorial Scholarships for undergraduate study in aerospace education are annually awarded. Each award is for $1,000. Recipients may also qualify for other scholarships.

151. TAU BETA PI ASSOCIATION
Box 8840, University Station
Knoxville, TN 37916

Twenty fellowships are available for Tau Beta Pi members who have demonstrated academic ability and financial need. Currently, stipends are $5,000 for nine months of work. The Director of Fellowships is usually able to secure tuition scholarships for Fellows at graduate institutions. Fellows may do any graduate work that enables them to contribute to the engineering profession. Awardees must write a report at the completion of the fellowship year summarizing their activities.

153. TEXAS ALLIANCE FOR MINORITIES IN ENGINEERING
UTA Station 19775
Arlington, TX 76019

The TAME Program unites engineering colleges in Texas to help them better orient minority students to opportunities in the field of engineering. It serves as an information

source and also provides help with college admissions and financial aid.

154. UNION COUNTY COLLEGE MINORITIES IN ENGINEERING PROGRAM
c/o Union County College
Cranford, NJ 07016

This is a pretechnical program to aid minorities to prepare for and enter studies for careers in engineering and science.

155. URBAN LEAGUE OF CLEVELAND
12001 Shake Boulevard
Cleveland, OH 44120

Among other activities, the League has operated a general orientation to engineering program for minority students.

156. URBAN LEAGUE OF EASTERN MASSACHUSETTS
236 Huntington Avenue
Boston, MA 02115

The League operates the Massachusetts Pre-Engineering Program for Minority Students as a means of introducing them to study and work in this area.

157. U.S. ARMY

Cooperative Education Program: Forty Army installations in the United States employ cooperative students from more than 80 accredited colleges. Cooperative education is an educational plan combining alternative periods of academic study with practical work experience leading to a bachelor's degree. A program usually takes five years to complete, eighteen months of which is allotted to paid work experience. Students employed by Department of Army for the work phases of their education program earn $6,000 to $9,000 depending on educational status. Enrollment in program does not require active duty in any of the Armed Forces.

Criteria: Enrolled in accredited colleges with cooperative programs; eligible for appointments under appropriate civil service regulations; students must be in scientific, engineering, technical, or professional fields.

Write: U.S. Office of Personnel Management Information Centers, nearest Department of the Army Installation, or Civilian Personnel Office (listed under U.S. Government in telephone directory) for information or consult a school counselor.

158. U.S. DEPARTMENT OF EDUCATION
Office of Indian Education
Washington, DC 20202

American Indian students seeking graduate or professional degrees in engineering, law, medicine, business, forestry, or a related field may apply for fellowships averaging $3,600 each year, plus $750 for each eligible dependent and the cost of tuition at an institution of the recipient's choice. In addition, Fellows receive allowances for books, materials, and moving expenses. Grants provide up to four years of study. Only American Indian students who are attending or have been accepted for admission as full-time students in a graduate or professional program are eligible.

159. U.S. DEPARTMENT OF ENERGY
Office of Minority Economic Support
Washington, DC 20585

The Department has a scholarship program which operates at nine universities and helps minority students with strong academic records, complete college and prepare for jobs in technical fields related to energy.

160. ENERGY RESEARCH AND DEVELOPMENT ADMINISTRATION
Washington, DC 20045

GRADUATE TRAINEESHIPS program funds projects through selected universities to support graduate students studying nuclear engineering.

LABORATORY COOPERATIVE program provides college juniors and seniors and faculty members with a summer research position in a laboratory. Students receive $100 per week and are reimbursed for travel costs to the site. To apply, contact the facilities of interest.

161. U.S. OFFICE OF PERSONNEL MANAGEMENT (OPM)

Student Trainee Programs: Students attendance in college full time during the academic year and on-the-job training in a federal agency during vacation periods is required for the Student Trainee Programs. Students are given career-conditional appointments and are often promoted to professional positions on graduation from college. Students majoring in physical sciences, mathematical sciences, agriculture, and engineering are selected for these vacation work-study programs.

Write to the U.S. Office of Personnel Management area office serving geographical region where desiring work. Some regions do not offer programs.

162. UNIVERSITY OF DAYTON
College of Engineering
Dayton, OH 45469

In a unique program offered in conjunction with Air Force Logistics Command, the University takes persons with college training in other areas and provides supplementary courses in electrical engineering. Students are able to work at a paid job while completing their program and some of the study is tuition free.

163. WESTINGHOUSE EDUCATION CENTER
Ardmore and Brinton
Pittsburgh, PA 15221

Among the scholarship awards sponsored by Westinghouse are the Bertha Lamme Scholarships for women entering the freshman year of engineering (three at $1,000 each) and Westinghouse Family Scholarships (44 awards of $1,500 or $10,000) for sons and daughters of current employees.

Science Talent Search awards are open to high school seniors interested in science, engineering, and math and include five-day all expenses paid, trips to the Science Talent Institute in Washington, D.C. Awards are made on the basis of an independent research project and range from $500 to $12,000. Apply through Science Service, 1719 N Street, NW, Washington, DC 20036. A good place to start is by asking a high school science teacher about the program.

A special brochure on careers in engineering has been prepared for Latino high school students.

164. WESTINGHOUSE ELECTRIC CORPORATION
Westinghouse Building
Gateway Center
Pittsburgh, PA 15222

This firm distributes a packet of materials to encourage minority students to enter engineering. It includes a list of financial aid sources, societies which may help, a booklet citing the challenges and salaries in engineering, and a poster to stimulate engineering interest.

165. WHITEHALL FOUNDATION
249 Royal Palm Way
Palm Beach, FL 33480

The Foundation provides grants-in-aid to help young investigators get support for their research projects.

Many are just starting out and lack the reputation which helps when competing for grants.

166. WOODS HOLE MARINE BIOLOGICAL LABORATORIES
Woods Hole, MA 02543

Traineeships in oceanography for minority group undergraduates are awarded to students enrolled in U.S. colleges or universities who have completed at least two semesters of undergraduate study. These awards provide a training and research experience in Woods Hole for students who have academic interests in physical or natural science, mathematics, or engineering. Traineeships may be awarded for a 10 to 12-week period in the summer or for a semester during the academic year and may be renewed the following year. A trainee is paid the same salary as that paid other employees with similar experience. In addition, the trainee receives the cost of round-trip travel to Woods Hole.

167. XEROX CORPORATION
P.O. Box 1600
Stamford, CT 06904

Xerox offers minority students scholarship aid of up to $4,000 a year to support studies in engineering or the sciences. Paid summer jobs may also be arranged as part of this program.

168. ZONTA INTERNATIONAL
35 E. Wackoa Drive
Chicago, IL 60601

Fellowships to women for advanced study and research in aerospace-related sciences and engineering are available through the Amelia Earhart Fellowship program. Stipends amount of $6,000. The applicant must have earned a bachelor's degree in a discipline basic to any of the many aerospace-related sciences; and the student must show promise of original research potential. Application deadline January 1.

SECTION III

ASSOCIATIONS IN THE FIELDS OF ENGINEERING AND SCIENCE

Accrediting Board for
Engineering and Technology
345 E. 47th Street
New York, NY 10017

American Association for the
Advancement of Science
1333 H Street NW
Washington, DC 20005

American Association of
Engineering Schools
345 E 47th Street
New York, NY 10017

American Association of Petroleum Geologists
P.O. Box 979
Tulsa, OK 74101

American Astronomical Society
c/o Sharp Laboratory
University of Delaware
Newark, DE 19711

American Chemical Society
1155 16th Street NW
Washington, DC 20036

American Federation of Information
Processing Societies
1899 Oreston White Drive
Reston, VA 22091

American Geological Institute
4220 King Street
Alexandria, VA 22302

American Institute for Architects
1735 New York Avenue
Washington, DC 20006

American Institute of Biological Sciences
1401 Wilson Boulevard
Arlington, VA 22209

American Institute of Chemical Engineers
345 E 47th Street
New York, NY 10017

American Institute of Physics
335 E 45th Street
New York, NY 10017

American Mathematical Society
P.O. Box 1571 Annex Station
Providence, RI 02904

American Nuclear Society
555 N Kensington Ave.
La Grange Park, IL 60525

American Society of Agricultural Engineers
2950 Niles Road
St. Joseph, MI 49085

American Society for Engineering Education
11 Dupont Circle NW, Suite 200
Washington, DC 20036

American Society for Metals
Metals Park, OH 44073

American Society for Microbiology
1913 Eye Street, NW
Washington, DC 20006

American Society of Zoologists
P.O. Box 2739
California Lutheran College
Thousand Oaks, CA 91360

American Statistical Association
806 15th Street, NW Suite 640
Washington, DC 20005

Associated General Contractors of America
1957 E Street, NW
Washington, DC 20006

Association for Computing Machinery
11 W 42nd Street
New York, NY 10036

Association for Women in Science
2401 Virginia Avenue NW
Washington, DC 20037

Botanical Society of America
c/o Department of Biology
Indiana University
Bloomington, IN 47405

Geological Society of America
P.O. Box 9140
Boulder, CO 80301

Institute of Electrical and Electronics Engineers
1111 19th Street, NW
Washington, DC 20006

Marine Technology Society
1730 M Street NE, Suite 412
Washington, DC 20036

Mathematical Association of America
1529 18th Street NW
Washington, DC 20036

National Action Council for Minorities
in Engineering
3 W 35th Street
New York, NY 10001

National Consortium for Graduate
Degrees for Minorities in Engineering
P.O. Box 537
Notre Dame, IN 46556

National Engineering Council for Guidance
1420 King Street, Suite 405
Alexandria, VA 22314

National Society of Professional Engineers
1420 King Street
Alexandria, VA 22314

Society of Exploration Geologists
P.O. Box 3098
Tulsa, OK 74101

Society of Manufacturing Engineers
P.O. Box 930
Dearborn, MI 48128

Society of Mining Engineers
Caller Box D
Littleton, CT 80127

Society of Plastics Engineers
14 Fairfield Drive
Brookfield Center, CT 06805

Women in Science and Engineering
c/o Harvard University
Cambridge, MA 02138

SECTION IV
BOOKS ABOUT CAREERS IN ENGINEERING AND SCIENCE AND PREPARATION FOR THOSE FIELDS

Aerospace Careers Handbook, ARCO Publishing, 1 Gulf and Western Plaza, New York, NY 10023

A Career in Astronomy, American Institute of Physics, 335 E 45th Street, New York, NY 10017

Career Choices for Students of Computer Science, Walker and Company 720 Fifth Avenue, New York, NY 10019

Career Choices for Students of Mathematics, Walker and Company, 720 fifth Avenue, New York, NY 10019

Careers in the Chemical Sciences, American Chemical Society, Education Division, 1155 16th Street, NW, Washington, DC 20036

Careers in Computers, National Textbook Company, 4225 W Touhy Avenue, Lincolnwood, IL 60646

Careers for Engineers in the Minerals Industry, Society of Mining Engineering, Caller Box D, Littleton, CO 80127

Careers in Exploration Geophysics, Society of Exploration Geophysicists, P.O. Box 10031, Lamar University Station, Beaumont, TX 77710.

Careers in Geology, American Association of Petroleum Geologists, P.O. Box 979, Tulsa, OK 74101.

Careers in Oceanography, American Geophysical Union, 2000 Florida Avenue NW, Washington, DC 20009.

Careers in Plant Pathology, American Phytopathological Society, 3340 Pilot Knot Road, St. Paul, MN 55121

Careers In Science, Association for Women in Science, 2401 Virginia AVenue, NW, Washington, DC 20037

Careers in Statistics, American Statistical Association, 806 15th Street, NW, Washington, DC 20005. Free

Chronicle Student Aid Annual, Chronical Guidance Publications, P.O. Box 1190, Monrovia, NY 13118.

Design for Excellence: How to Study Smartly National Action Council for Minorities in Engineering, 3 West 35th Street, New York, NY 10001.

Directory of Special Programs for Minority Group Members, 4th Edition, Garrett Park Press, P.O. Box 190, Garrett Park MD 20896.

Employment Guide for Engineers and Scientists: Student Edition, Institute of Electrical and Electronics Engineers, 1111 19th Street, NW, Washington, DC 20006.

Engineering: An Introduction to a Creative Profession, Macmillan Publishing, 866 Third Avenue, New York, NY 10022.

The Engineering Career Guide, ARCO Publishing, 1 Gulf and Western Plaza, New York, NY 10023.

Engineering Scholarships for Graduating High School Students, National Society of Professional Engineers, 1420 King Street, Alexandria, VA 22314.

Exploring Careers in Science, Richards Rosen Press, 29 E 21st Street, New York, NY 10010.

Financial Aid Unscrambled: A Guide for Minority Engineering Students, National Action Council for Minorities in Engineering, 3 West 35th Street, New York, NY 10001.

Financial Aids for Higher Education, W.C. Brown Publishers, 2460 Kerper Blvd, Dubuque, IA 52004.

Guide to Education in Science, Engineering, and Public Policy, American Association for the Advancement of Science, 1333 H Street, NW, Washington, DC 20005.

A Look at Computer Careers and Facts on Computer Careers, American Federation of Information Processing Societies, 1899 Preston White Blvd., Reston, VA 22091.

A Look into Computer Careers, Association for Computing Machinery, 11 W 42nd Street, New York, NY 10036.

Opportunities in Chemical Engineering, National Textbook Company, 4255 W Touhy Avenue, Lincolnwood, IL 60646.

Opportunities in Chemistry Careers, National Textbook Company, 4225 W Touhy Avenue, Lincolnwood, IL 60646.

Opportunities in Civil Engineering, National Textbook Company, 4225 W. Touhy Avenue, Lincolnwood, IL 60646.

Opportunities in Energy Careers, National Textbook Company, 4225 W Touhy Avenue, Lincolnwood, IL 60646.

Opportunities in Mechanical Engineering, National Textbook Company, 4225 W Touhy Avenue, Lincolnwood, IL 60646.

Physics: A Career for You? American Institute of Physics, 335 E 45th Street, New York, NY 10017

Pre-College Program Directory, National Action Council for Minorities in Engineering, 3 West 35th Street, New York, NY 10001.

Professional Opportunities in Mathematics, Mathematical Association of America, 1529 18th Street NW, Washington, DC 20036.

Scholarships, Fellowships and Loans, Bellman Publishing Company, P.O. Box 34937, Bethesda, MD 20817.

Successfully Negotiating the Graduate School Process: A Guide for Minority Students. National Consortium for Graduate Degrees for Minorities, P.O. Box 537, Notre Dame, IN 46556.

Top Dollars for Technical Scholars: A Guide to Engineering, Math, Computer Science, and Science Scholarships. Octameron Associates, P.O. Box 3437, Alexandria, VA 22302.

The Woman Engineer (periodical) distributed free to qualified students by Equal Opportunity Publications, 44 Broadway, Greenlawn, NY 11740.

Women in Engineering: Directory of College/University Programs, American Society for Engineering Education, 11 Dupont Circle NW, Suite 200, Washington, DC 20036.

Women in Physics, American Physical Society, Committee on Status of Women in Physics, 335 E 45th Street, New York, NY 10017.

Women in Science, Simon and Schuster, 1230 Avenue of the Americas, New York, NY 10020.

Your Job in the Computer Age, Scribber's, 597 Fifth Avenue, New York, NY 10017.

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